REMARKS

Claims 1, 3-12, 14-17, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shie et al., U.S. patent 6,480,389 (hereinafter "Shie"). Applicants respectfully traverse the rejection. Claim 1 recites, among other things, "a semiconductor light emitting device; and a substrate comprising a ceramic core and at least one copper layer overlying the core." The Examiner's rejection states "Shie discloses, fig. 1, a structure comprising: a semiconductor light emitting device (LED) 20; a substrate comprising a ceramic core 50 and at least one copper layer 10 overlying the core."

Shie teaches at column 2 lines 58 and 59 that structure 50 is **NOT** a "ceramic core" as alleged by the Examiner, rather it is "a printed circuit board (PCB)." Applicants respectfully submit that printed circuit boards are typically plastic and metal, not ceramic. As an example, Applicants attach the cover page, copyright page, and page 588 of Newton's Telecom Dictionary, 18th edition. On page 588 is a definition of a printed circuit board which states a PCB is a "flat material (fiberglass/epoxy) on which electronic components are mounted. A PCB also provides electrical pathways called traces . . ." Nowhere does the definition suggest that a PCB is or contains a ceramic core. Accordingly, the structure pointed to in Shie by the Examiner as being claim 1's ceramic core is a PCB not a ceramic core, thus the Examiner's rejection fails to teach every element of claim 1. Claim 1 is thus allowable over Shie.

In the rejection of claim 3, the Examiner states:

> Regarding claim 3, although Shie does not expressly disclose the core comprises a material selected from the group of aluminum oxide/nitride and silicon nitride, it discloses that the ceramic core is a PCB aluminum based (see col. 3, line 1). Since PCB's are normally isolative and aluminum oxide/nitride are the most common form of aluminum based insulators, it is very likely that the core is in fact aluminum oxide/nitride. Assuming, arguendo, that the ceramic core 50 is not aluminum oxide/nitride, it would have been obvious to one or ordinary skill in the art at the time of the invention to make the core as aluminum oxide/nitride, since it is suggested in the reference that the core is aluminum based, and aluminum oxide and aluminum nitride are the most common form of aluminum based insulators.

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Contrary to the Examiner's interpretation of Shie, the "aluminum-based PCB" referred to at column 3 line 1 is no doubt a metal-core PCB, described in paragraph [0020] of the present application, which are commonly used conventional mounts for LEDs. As recited in paragraph [0020], a standard metal core printed circuit board has "thin copper traces bonded to a dielectric layer with epoxy, then bonded to an aluminum layer with epoxy." The aluminum referred to by Shie is an aluminum layer, not an aluminum-based ceramic layer. Ceramics are completely different materials from aluminum. The Examiner's suggestion that it is obvious to replace aluminum with aluminum oxide or nitride is analogous to saying that it would be obvious to replace a diamond with a bubble of carbon dioxide, since both materials contain carbon.

Since Shie fails to teach a ceramic core, Shie fails to teach every element of claim 1, thus claim 1 is allowable over Shie. Claims 3-12, 14-17, 23, and 24 depend from claim 1 and are therefore allowable over Shie for at least the same reasons as claim 1.

Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shie as applied to claim 1, in view of Applicants admitted prior art. The Examiner's rejection of claims 2 and 13 adds nothing to the deficiencies of Shie with respect to claim 1, from which claims 2 and 13 depend. Claims 2 and 13 are thus allowable over Shie for at least the same reason as claim 1.

In view of the above arguments, Applicant respectfully requests allowance of claims 1-17, 23, and 24. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

Submitted Electronically

Respectfully submitted,

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interLATA service automatically without requiring the customer to dial an access code for that carrier. See Presubscription. Same as a Primary Interexchange Carrier.

Primary Link The active LAN connection. When it fails the LAN is switched to the Backup link.

Primary Partition A portion of a physical disk that can be marked for use by an operating system. Under MS-DOS, there can be up to four primary partitions (or up to three, if there is an extended partition) per physical disk. A primary partition cannot be subpartitioned.

Primary Rate Interface The ISDN equivalent of a T-1 circuit. The Primary Rate Interface (that which is delivered to the customer's premises) provides 23B+D (in North America) or 30B+2D (in Europe) running at 1.544 megabits per second and 2.048 megabits per second, respectively. There is another ISDN interface. It's called the Basic Rate Interface. It delivers 2B+D over either one or two pairs. In ISDN, the "B" stands for Bearer, which is 64,000 bits per second, which can carry PCM-digitized voice or data. See ISDN for a much better explanation.

Primary Resource An SCSA definition. The main resource around which a Group is constructed. Typically, the primary resource will be an interface to the telephone network, but it may also be a switch port.

Primary Routing Point The switch designated as the channel point for a long haul telephone call.

Primary Server The SFT III Novell NetWare server that has been operating longer than its partner and is currently servicing the attached workstations. The primary server is the SFT III server that network workstations "see," and the one to which they send requests for network services. Routers on the internetwork see only the primary server and send routing packets to it. The primary server's IOEngine determines the order and type of events that are sent to the MSEngine. Only the primary server sends reply packets to network workstations. The secondary server is the SFT III NetWare server that is activated after the primary server. Either server may function as primary or secondary, depending on the state of the system. You cannot permanently designate which server is primary or secondary. System failure determines each server's role, that is, when the primary server fails, the secondary server becomes the new primary server. When the failed server is restored, it becomes the new secondary server.

Primary Station A network node that controls the flow of information on a communications link. Also, the station that, for some period of time, has control of information flow on a communications link (in this case primary status is temporary).

Primary Storage The main internal storage.

Primary Wire Center A switching center in the AT&T/Bell system hierarchy of exchange classes. The primary center is a Class 3 exchange. It is used to connect toll offices and less frequently to connect a toll center with a local end office. Primary centers are capable of connecting toll centers through sectional centers and then to local end offices to establish communication connections when simple routing possibilities are busy.

Prime Focus Parabolic Antenna There are two types of satellite antennas — a prime focus parabolic antenna and an offset parabolic antenna. A "normal" satellite antenna is a pure parabola. It's been around forever. A newer antenna, called the offset antenna is taller than it is wide. According to the manufacturers, the offset antenna design makes far more efficient use of the antenna surface than a traditional prime focus parabolic antenna. What that means is that it captures more of the satellite signal hitting the antenna. Offset antennas are more expensive than the "normal" parabolic satellite antennas, which are called "prime focus parabolic antennas." They are more expensive because they cost more to make since they typically must be made out of one sheet of metal. Offset antennas are harder to carry around, since you can't make them out of several foldover sheets of metal.

Prime Line A key system feature. You can program your phone set to automatically select a certain phone line whenever your lift the receiver or press the Handsfree/Mute button. The line that appears is called the Prime Line.

Prime Line Preference When you pick up the handset on your key system or hybrid key, you are automatically connected to your preferred line (central office or intercom), rather than having to punch down an extra line button. Some phone systems tout this as a feature. Some have it set up where you simply leave one of the line buttons depressed and it doesn't pop up when you put your handset back into its cradle. Most 1A2 phone systems have this feature. Not all electronic phone systems do. Walker breaks the features into Prime Line Outgoing and Prime Line Incoming, and allows you to program the phones separately.

Primitive An abstract, implementation independent, interaction between a lo ice user and a layer service provider. See Primitives.

Primitives Abstract representations of interactions across the service acces indicating information is passed between the service user and service provider. T four types of primitives in the OSI Reference Model — request, indication, respo confirm.

Principal First or highest in importance. An owner or part-owner of a business son who authorizes another, as an agent, to represent him. Often confused with p not that a principal necessarily has any principles. See Principle.

Principle A general or fundamental truth an which others are based. A rule of c Often confused with principal. See Principal.

Principal Headend According to the FCC's definition, the principal headen cable television system is: If the system has one headend, that headend is the "P Headend" and if the system has two or more headends, the operator may designa "Principal Headend". However, once designated, it cannot be changed except for cause". The location of the Principal Headend is a factor in determining the must-car tus of certain broadcast stations.

Print Control Character A coded control character used to instruct the p ing unit on how a message is to be formatted in hard copy. Print control characters in carriage returns, back spaces, line feeds, tabs, etc.

Print Server A networked computer, usually consisting of fixed-disk storage a CPU, that controls one or more printers that can be shared by users.

Print Spooler An application that manages print requests or jobs so that any can be processed while other jobs are placed in a queue until the printer has finished previous jobs. See Print Spooling.

Print Spooling A technique used to schedule printing tasks to one printer an free up computer time from the slow task of feeding a slow printer (Any printer is s compared to the speed of a computer). A small program or program/machine called spooler does the scheduling. A user loads the print task to the spooler and when the p task's turn comes, the job is printed. Print spooling is handled several ways: You can a cate part of the computer's main memory to become a print spooler. You can allocate p of the company's disk memory to become a print spooler. You can get an external dev called a print spooler. It will have all the storage space and software necessary. There two primary advantages to Print Spooling: 1. You can use the spooler to save your a your computer's time. Dump the report to a print spooler at thousands of bits per secon Get on with something else on the computer. 2. You can use a print spooler to schedu several users' printing requests. This is particularly good in multi-user environments — f example, where the printer is a laser printer (and therefore expensive) and is attached a LAN (Local Area Network).

Printed Circuit Board PCB. Flat material (fiberglass/epoxy) on which ele tronic components are mounted. A PCB also provides electrical pathways called traces, thi connect components. Printed circuit boards are what PBXs and computers are made o these days. Be careful when you're replacing PCBs. They're usually very sensitive to stati electricity. Handle them only when you're attached to a static electricity strap that is prop erly grounded. Lay them down only on a surface you're sure is static electricity free. And don't touch the components on PCBs whatever you do.

Printed Wire Assembly A printed wire assembly is another name for a print ed circuit board (PCB) or printed wiring board (PWB) with all the components stuffed into the board.

Printer A device which takes computer information and prints it on paper.

Printer Control Language PCL. See PCL.

Printer Driver A program that controls how your computer and printer interact. A printer driver file supplies information such as the printing interface, description of fonts, and features of the installed printer.

Printer Emulation A fax term for mimicking a printer-generated document. This way, the outgoing fax will look as if it has come from the printer attached to the computer. This can include full formatting, as well as letterhead, signature and graphic images.

Printer Font A font stored in your printer's memory, or soft fonts that are sent to your printer before a document is printed.

Printer Server A computer and/or program providing LAN (Local Area Network) users with access to a centralized printer. A person using the LAN will send a message to the printer server computer. This computer will then assign it a piece of memory or disk space to store its file while it waits to be printed. With a printer server, users can send to the print-